

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 08017801
PUBLICATION DATE : 19-01-96

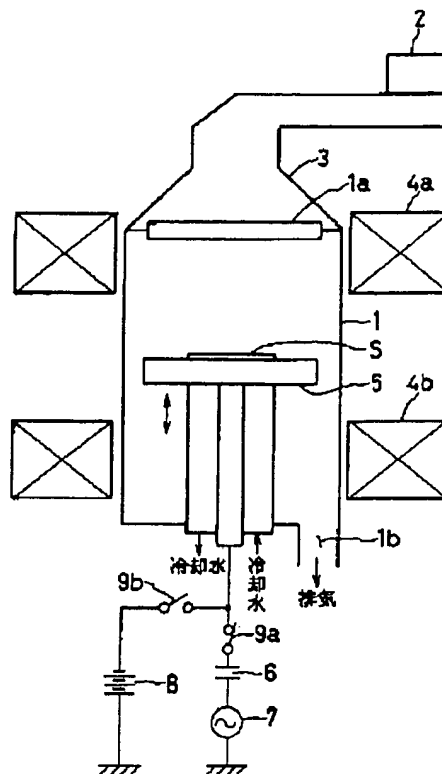
APPLICATION DATE : 29-06-94
APPLICATION NUMBER : 06147947

APPLICANT : KOBE STEEL LTD;

INVENTOR : NOZAWA TOSHIHISA;

INT.CL. : H01L 21/3065 C23F 4/00 // G01R 33/64

TITLE : ECR PLASMA ETCHING METHOD OF DIAMOND THIN FILM



ABSTRACT : PURPOSE: To etch a surface smoothly without causing protrusions due to a rough surface by etching a diamond thin film with a mixed gas of oxygen and argon where the concentration range of oxygen gas, a reaction gas pressure, and a microwave power surface density are specific values.

CONSTITUTION: A sample substrate S where a diamond thin film is formed is positioned near the middle position of a pair of magnetic coils 4a and 4b, namely near the center of a mirror magnetic field, by moving and adjusting a sample stand 5 up and down. Then, a bias voltage is applied to the sample substrate S and at the same time is cooled, a mixed gas of oxygen and argon whose oxygen gas concentration range is 2-20vol.% is used as a reaction gas, and the reaction gas pressure is set to 10mTorr or less. Then, the diamond thin film is etched where a microwave power surface density is 2.0W/cm² or less.

COPYRIGHT: (C)1996,JPO